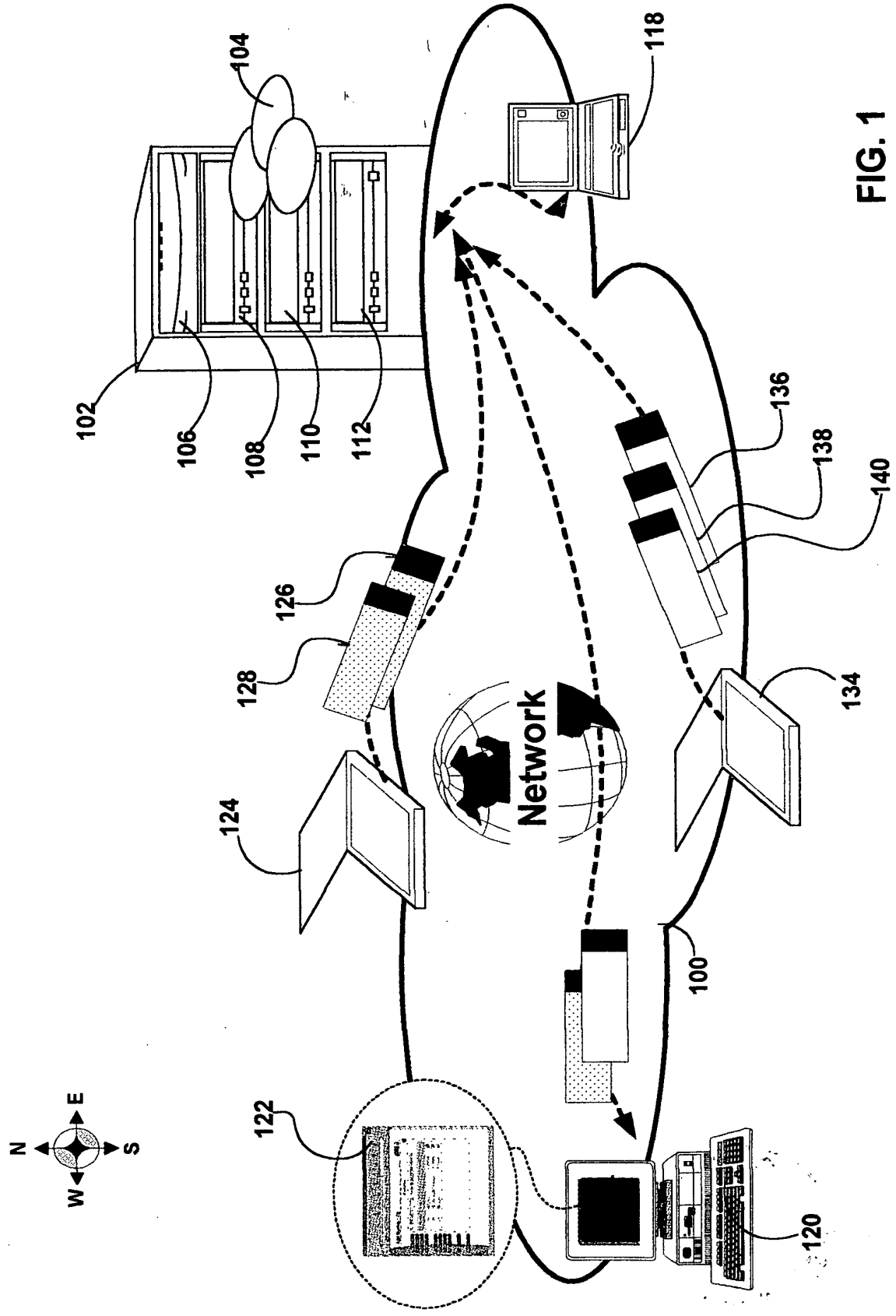
104
118
102
106
108
110
112
136
138
140
126
128
Network
134
124
100
122
120
N
E
S
W

FIG. 1

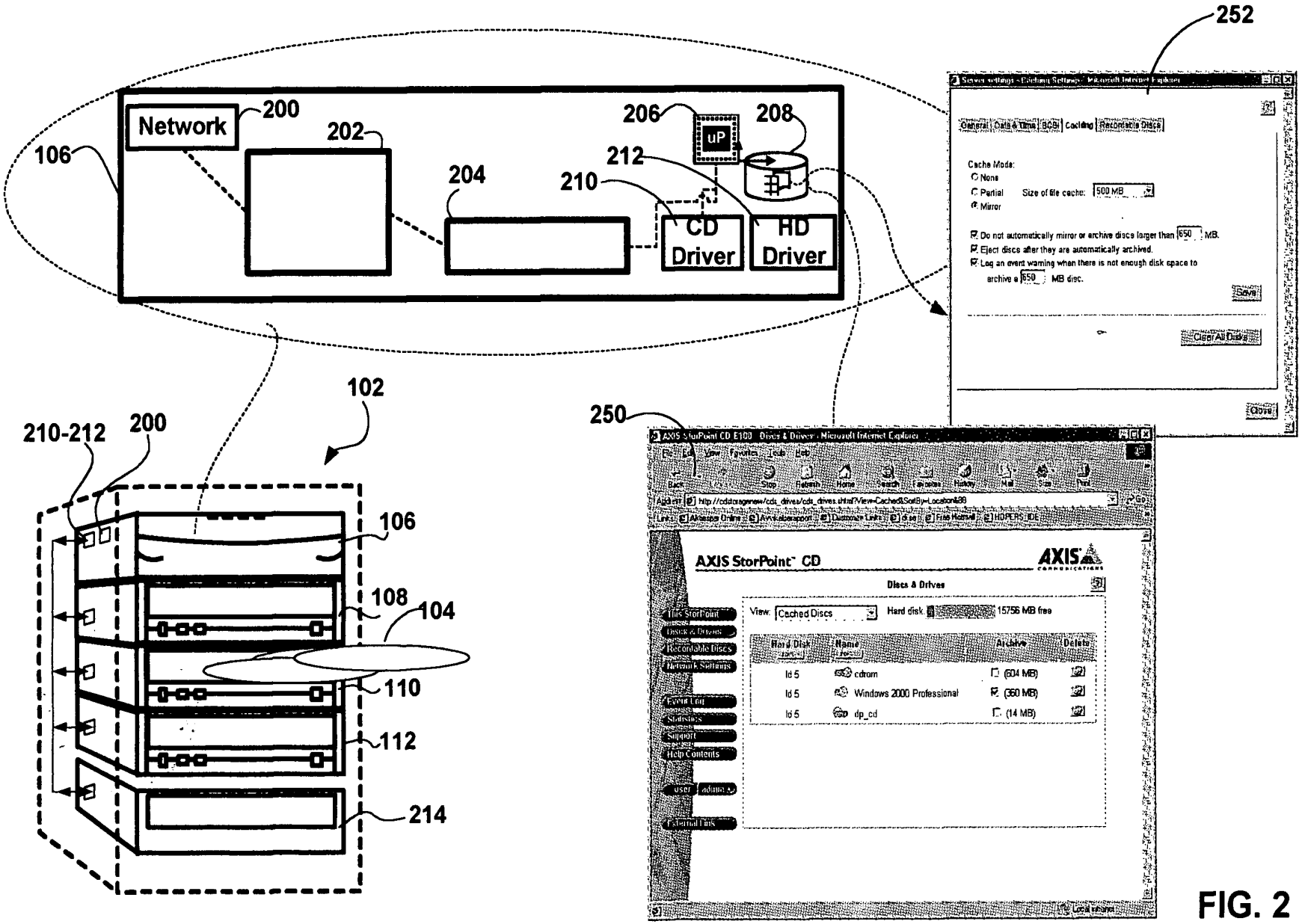
252
Network
200
202
206
uP
208
212
204
210
106
CD Driver
HD Driver
Cache Mode:
None
Partial
Size of file cache:
500 MB
Mirror
Do not automatically mirror or archive discs larger than
650
MB.
Eject discs after they are automatically archived.
Log an event warning when there is not enough disk space to archive a
650
MB disc.
Save
Clear All Disks
Close
102
210-212
200
250
106
108
104
110
112
214
AXIS StorPoint™ CD
AXIS
Discs & Drives
View:
Cached Discs
Hard disk:
15756 MB free
Hard Disk
Name
Archive
Delete
Id 5
cdrom
(604 MB)
Id 5
Windows 2000 Professional
(360 MB)
Id 5
dp_cd
(14 MB)
This StorPoint
Discs & Drives
Recordable Discs
Network Settings
Event Log
Statistics
Support
Help Contents
User
admin
External Tools

FIG. 2

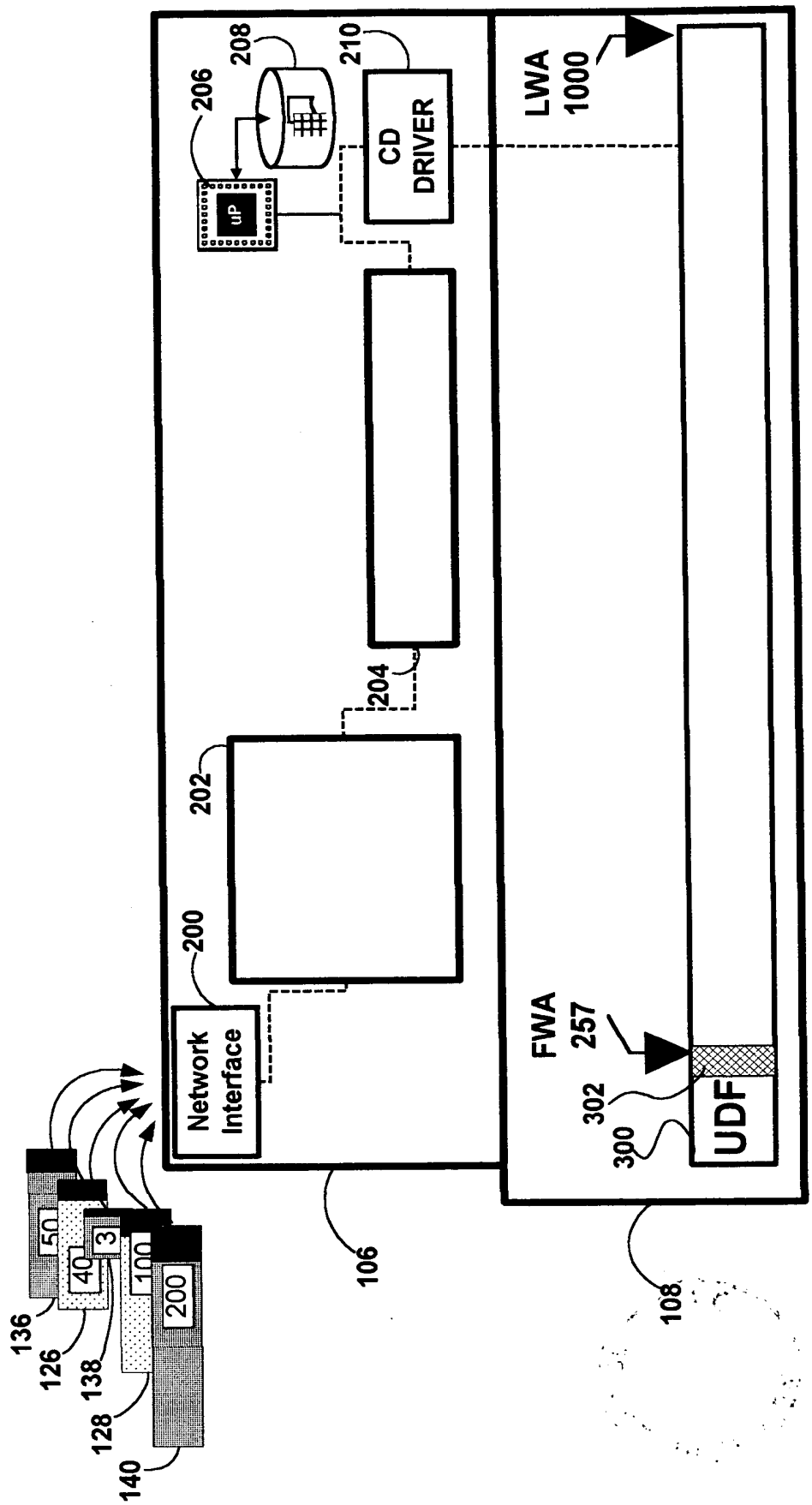
LWA
1000
FWA
257
UDF
302
300
CD
DRIVER
uP
206
208
210
204
202
200
Network
Interface
106
108
136
126
138
128
140
50
40
3
100
200

FIG. 3A

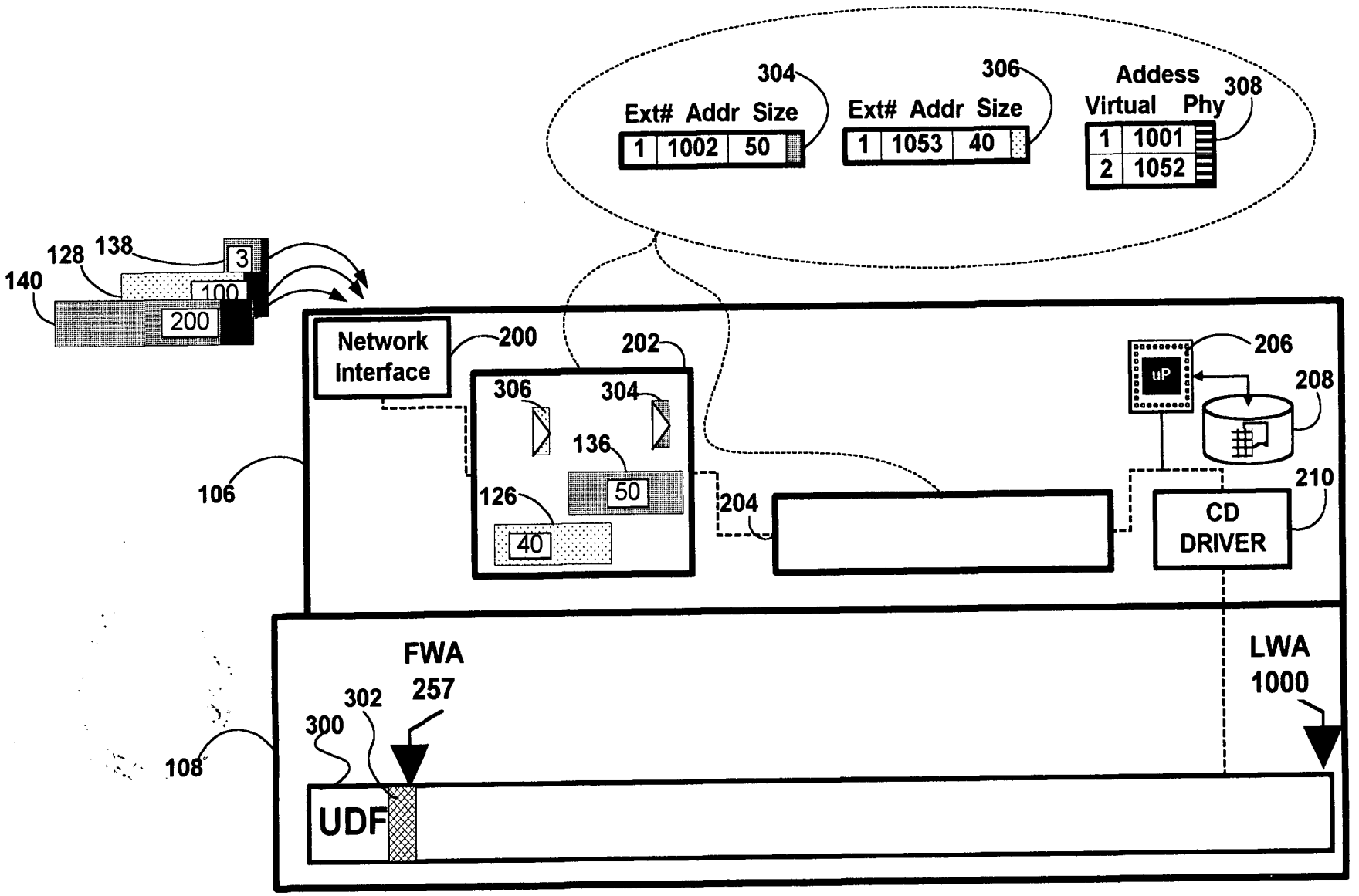
304
Ext# Addr Size
1 1002 50
306
Ext# Addr Size
1 1053 40
Addess
Virtual Phy
308
1 1001
2 1052
128
138
140
3
100
200
Network Interface
200
202
306
304
136
50
126
40
106
204
206
uP
208
210
CD DRIVER
FWA
257
302
300
108
UDF
LWA
1000

FIG. 3B

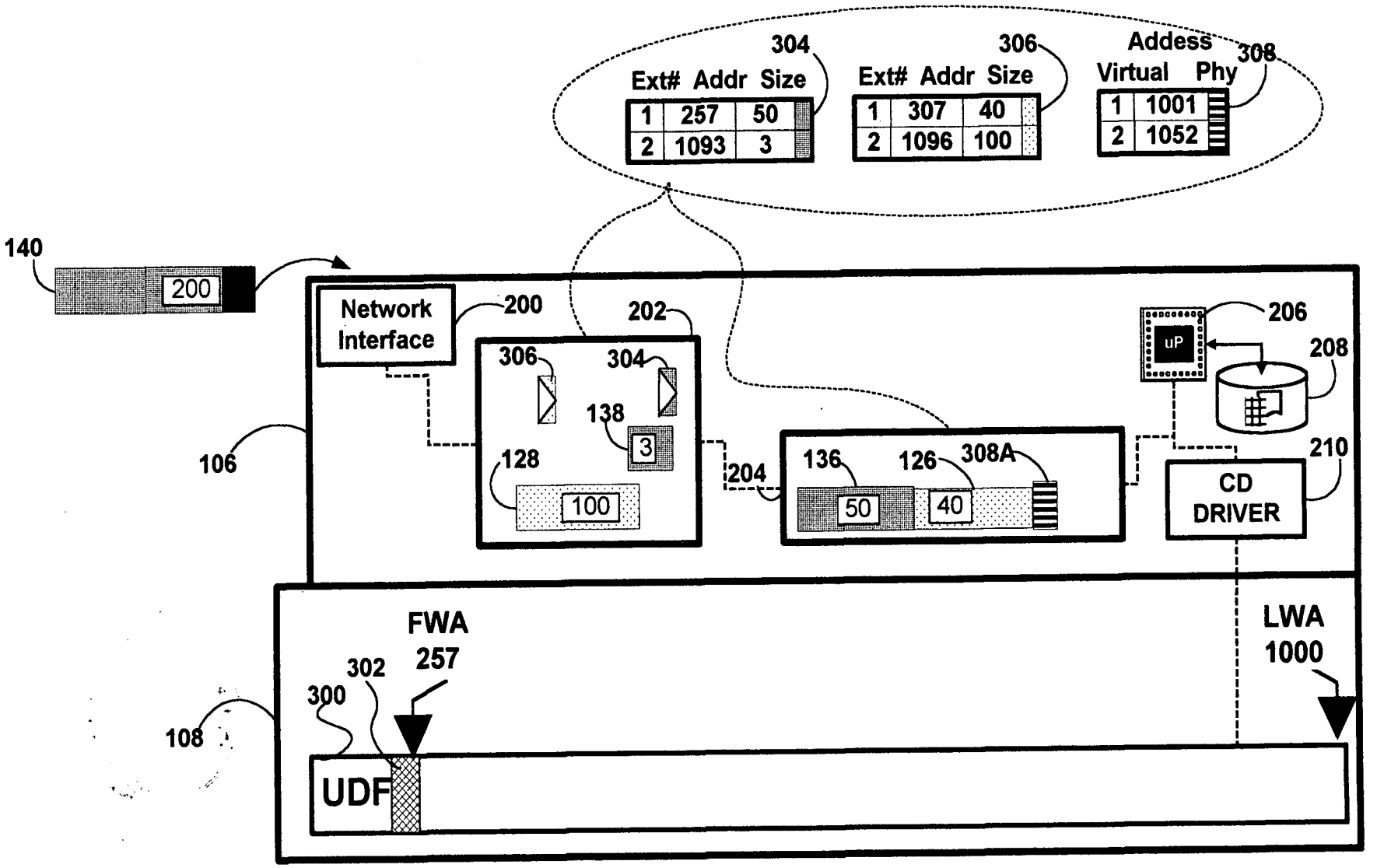
304
Ext# Addr Size
1 257 50
2 1093 3
306
Ext# Addr Size
1 307 40
2 1096 100
Addess
Virtual Phy
308
1 1001
2 1052
140
200
Network Interface
200
202
306
304
138
3
128
100
106
204
136
126
308A
50
40
uP
206
208
210
CD DRIVER
FWA
257
302
300
108
UDF
LWA
1000

FIG. 3C

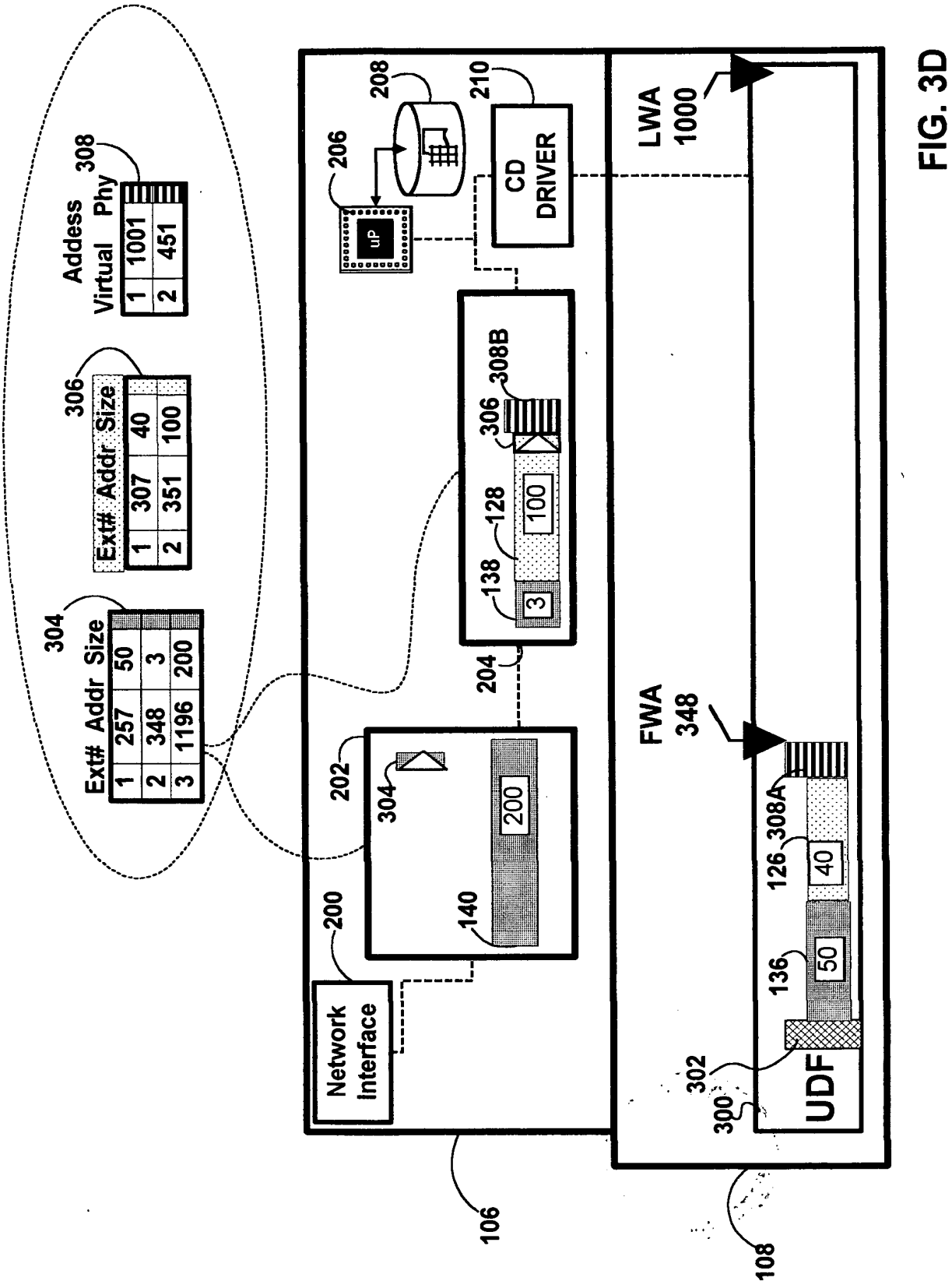
Ext# Addr Size
1 257 50
2 348 3
3 1196 200
304
Ext# Addr Size
1 307 40
2 351 100
306
Addess Virtual Phy
1 1001
2 451
308
uP
206
208
CD DRIVER
210
LWA 1000
FWA 348
308B
306
128
100
138
3
204
202
304
200
140
200
Network Interface
106
108
126
308A
40
136
50
302
300
UDF

FIG. 3D

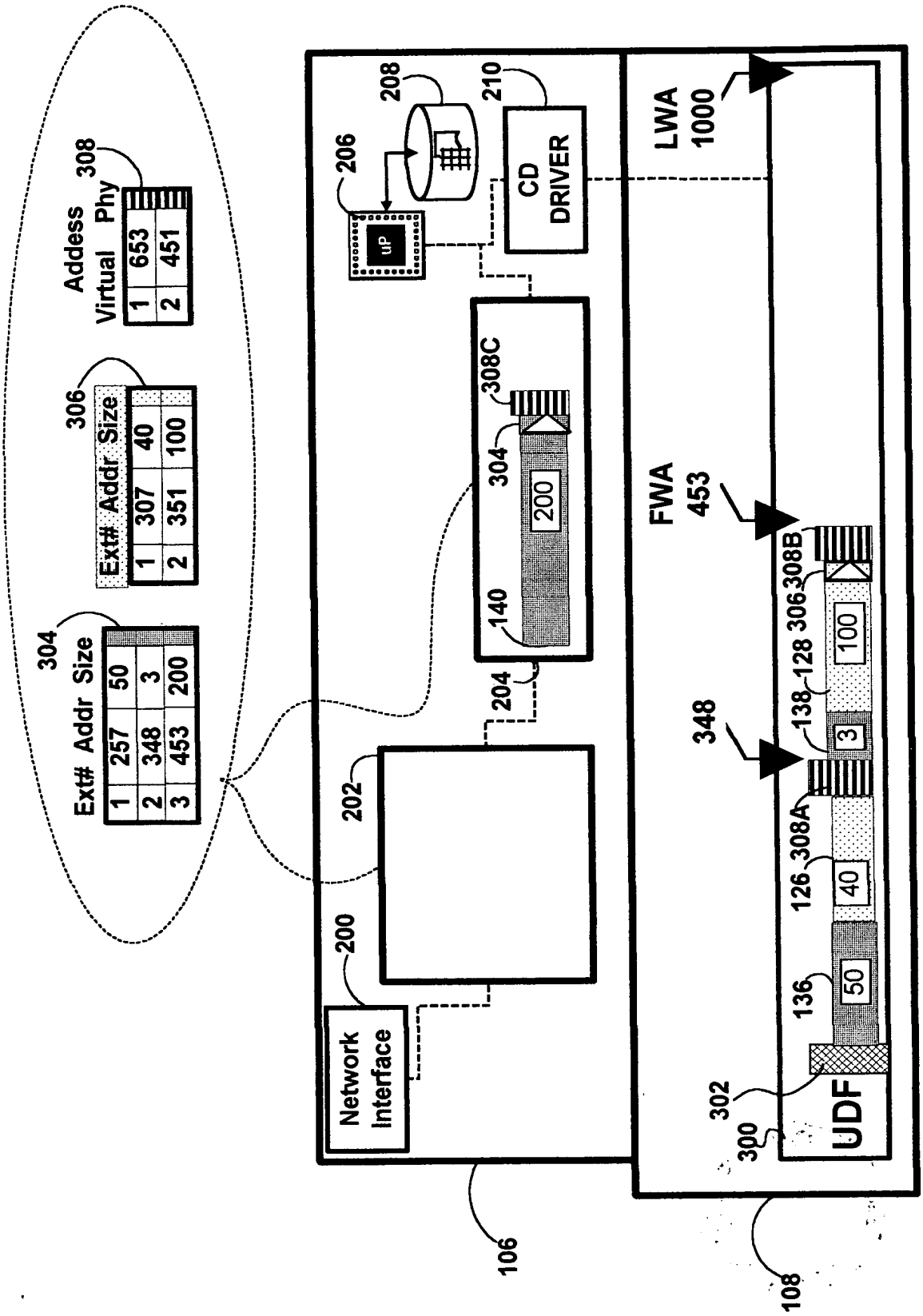
304
Ext# Addr Size
1 257 50
2 348 3
3 453 200
306
Ext# Addr Size
1 307 40
2 351 100
308
Addess Phy
Virtual
1 653
2 451
206
208
210
uP
CD DRIVER
LWA 1000
FWA 453
348
308C
304
200
140
204
202
200
Network Interface
106
308B
306
128
100
138
3
308A
126
40
136
50
302
300
UDF
108

FIG. 3E

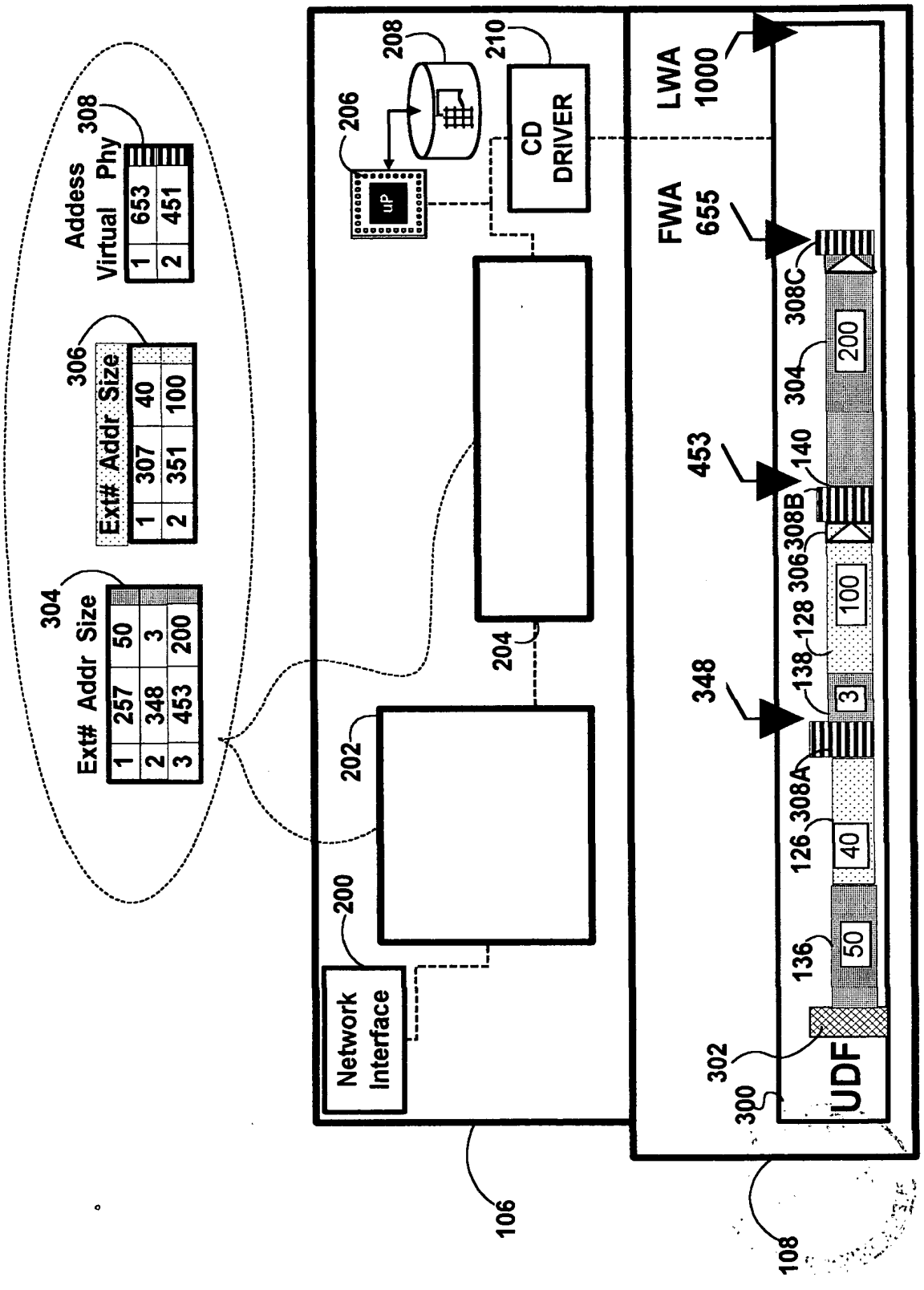
Ext# Addr Size
1 257 50
2 348 3
3 453 200
304
Ext# Addr Size
1 307 40
2 351 100
306
Addess Phy
Virtual
1 653
2 451
308
206
uP
208
210
CD DRIVER
LWA 1000
FWA 655
453
348
308C
304
200
140
308B
306
100
128
138
3
126
308A
40
136
50
302
300
UDF
204
202
200
Network Interface
106
108

FIG. 3F

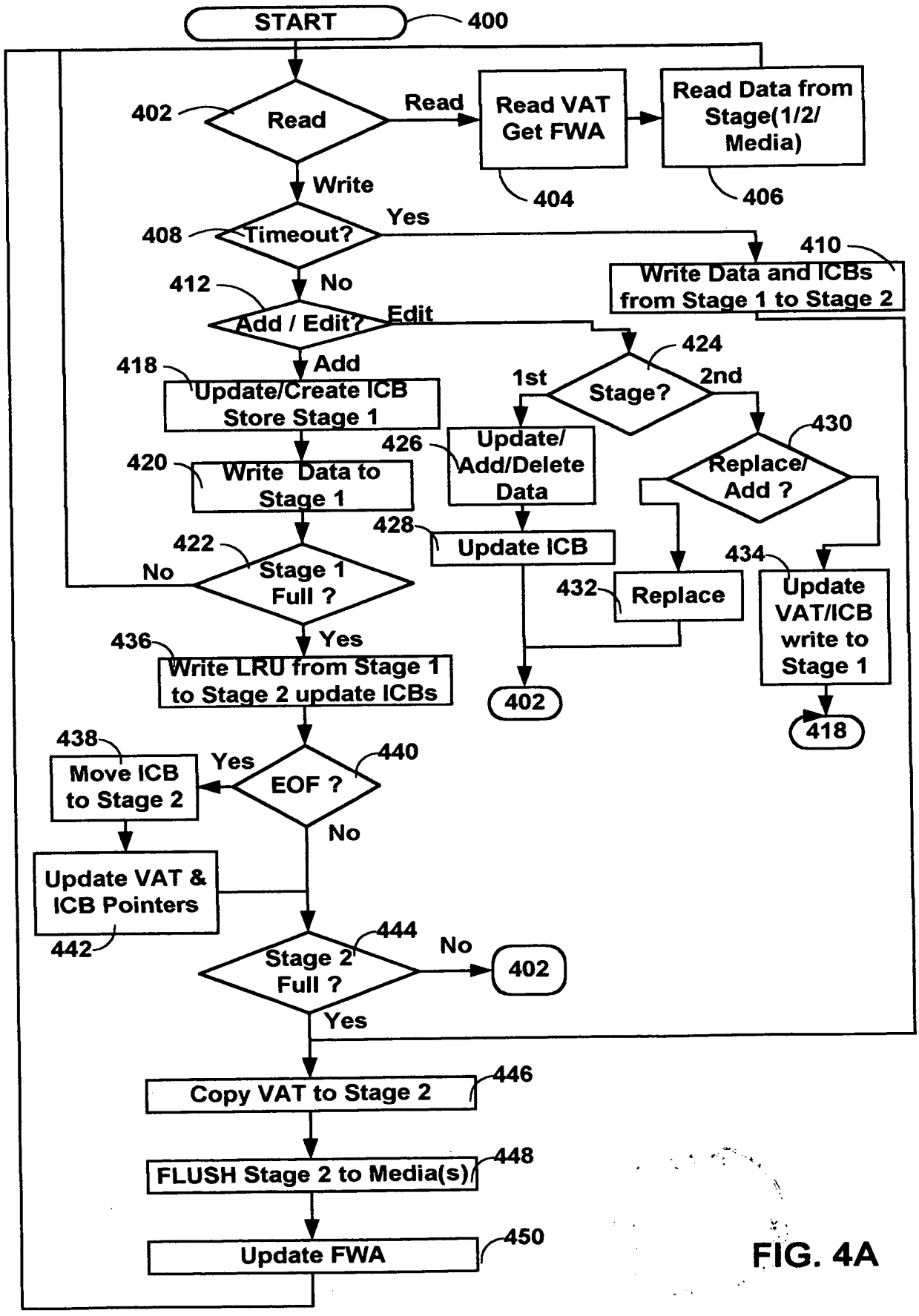
START
400
402
Read
Read
Read VAT Get FWA
Read Data from Stage(1/2/ Media)
404
406
Write
408
Timeout?
Yes
410
Write Data and ICBs from Stage 1 to Stage 2
412
No
Add / Edit?
Edit
424
Stage?
1st
2nd
Add
418
Update/Create ICB Store Stage 1
426
Update/ Add/Delete Data
430
Replace/ Add ?
420
Write Data to Stage 1
428
Update ICB
422
No
Stage 1 Full ?
432
Replace
434
Update VAT/ICB write to Stage 1
Yes
436
Write LRU from Stage 1 to Stage 2 update ICBs
402
418
438
Move ICB to Stage 2
Yes
440
EOF ?
No
Update VAT & ICB Pointers
442
444
Stage 2 Full ?
No
402
Yes
446
Copy VAT to Stage 2
448
FLUSH Stage 2 to Media(s)
450
Update FWA

FIG. 4A

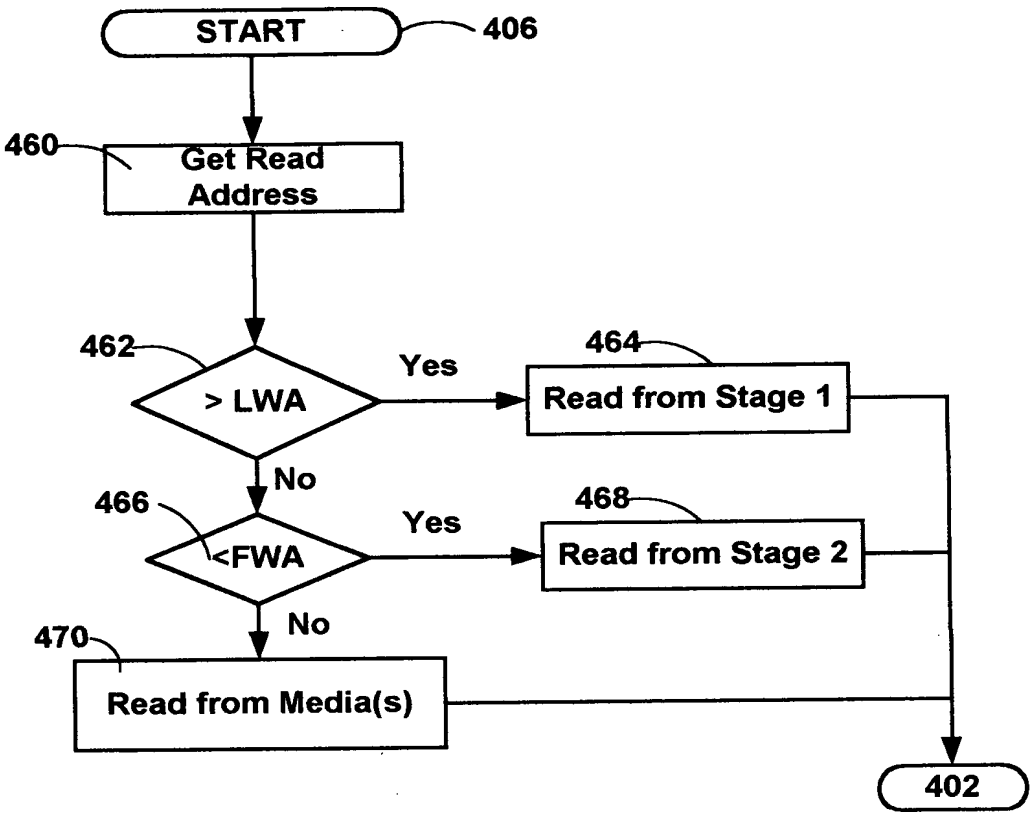
START
406
460
Get Read Address
462
> LWA
Yes
464
Read from Stage 1
No
466
<FWA
Yes
468
Read from Stage 2
No
470
Read from Media(s)
402

FIG. 4B

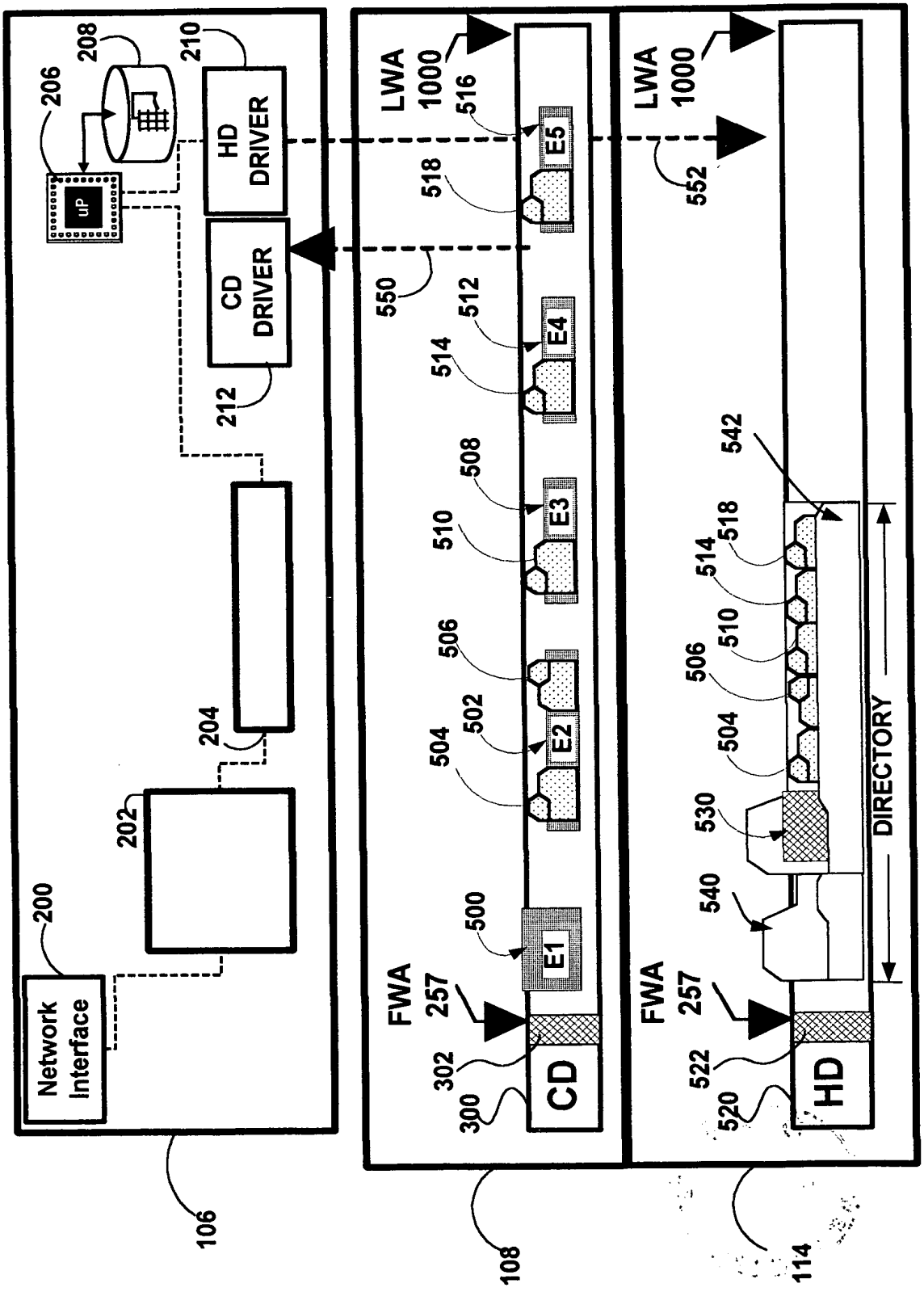
Network Interface
200
202
204
106
uP
206
208
210
HD DRIVER
CD DRIVER
212
LWA 1000
516
518
E5
550
512
E4
514
508
E3
510
506
E2
504
502
E1
500
FWA
257
302
300
CD
108
552
542
DIRECTORY
530
540
522
520
HD
114

FIG. 5

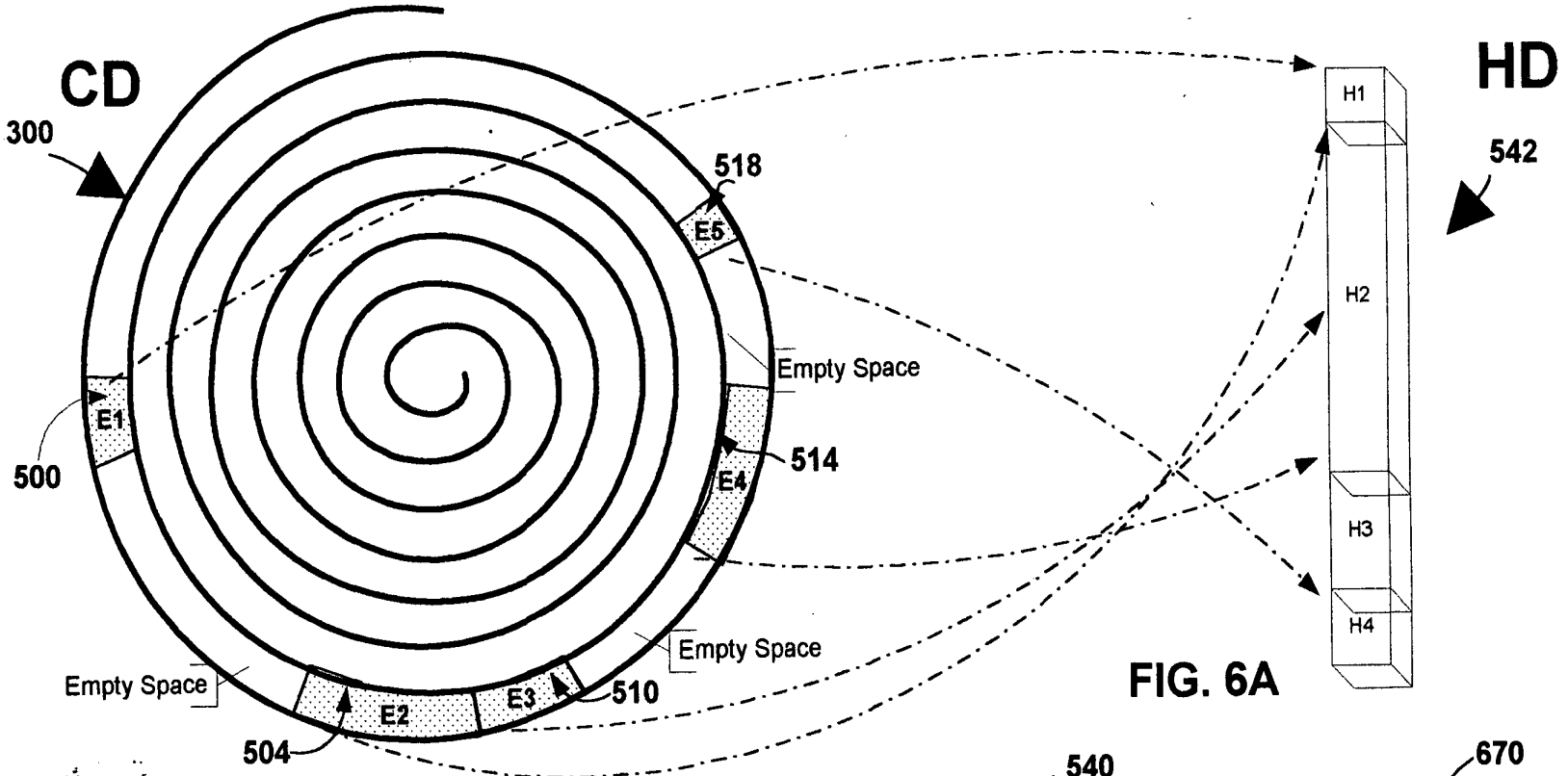

FIG. 6A

540

CD				HARD DRIVE			
Ext#	Offset	Size	Content	Ext#	Offset	Status	Cache
E1	10	2	Pointers	H1	0	Done	Mirror
E2	14	26	File 1,2	H2	2	Done	
E3	40	16	File 3				
E4	60	8	File 4	H3	44	Progress	
E5	70	3	File 5	H4	52	Progress	

652 654 656 658 660 662 664 666

FIG. 6B

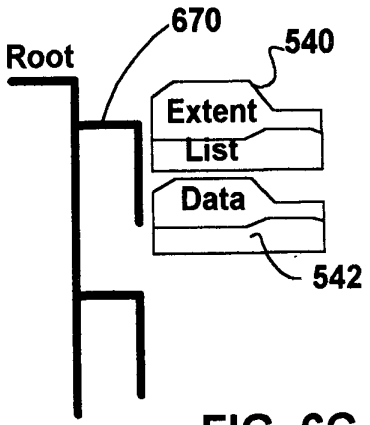

FIG. 6C

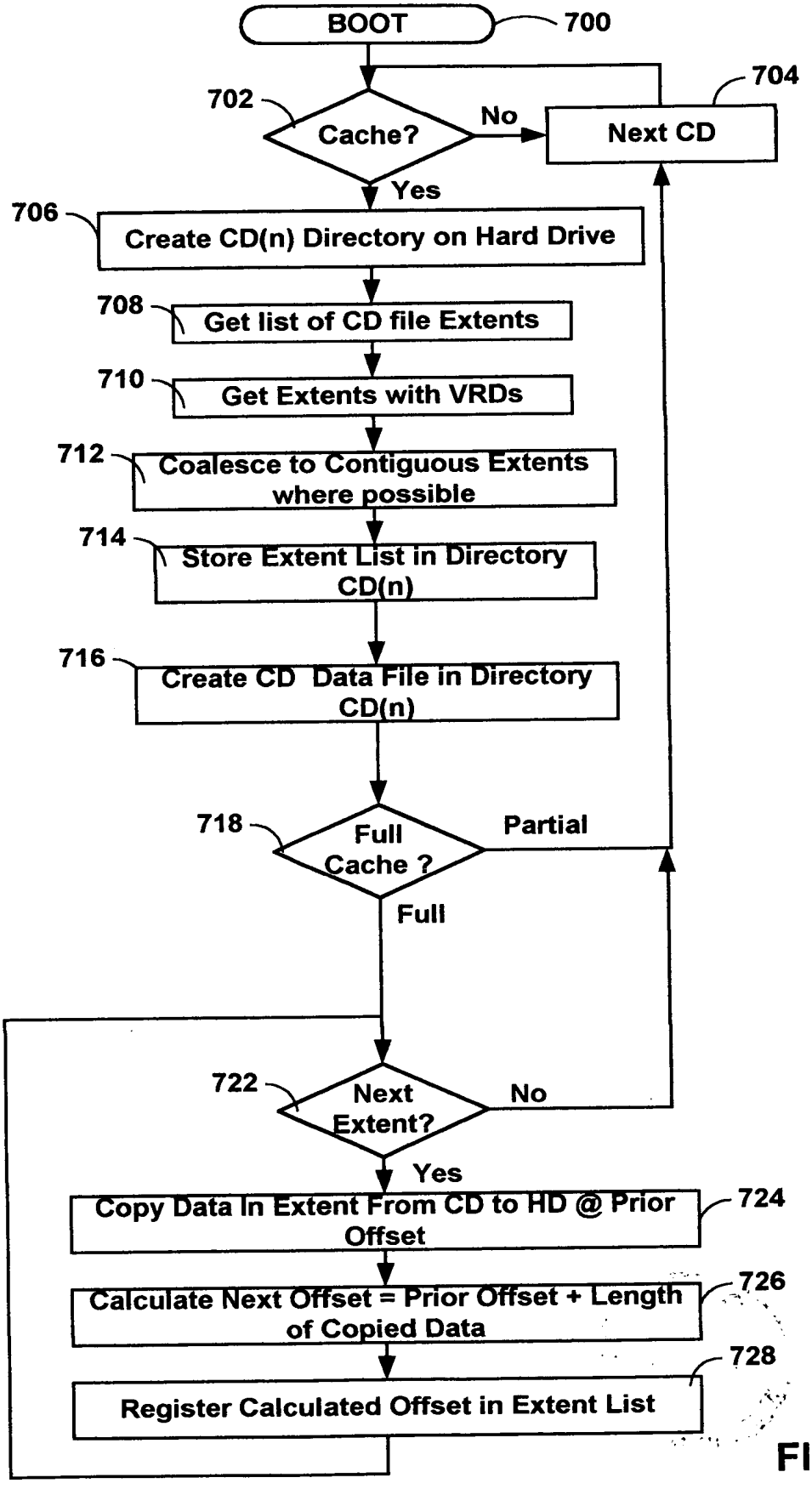
BOOT
700
702
Cache?
No
704
Next CD
Yes
706
Create CD(n) Directory on Hard Drive
708
Get list of CD file Extents
710
Get Extents with VRDs
712
Coalesce to Contiguous Extents where possible
714
Store Extent List in Directory CD(n)
716
Create CD Data File in Directory CD(n)
718
Full Cache ?
Partial
Full
722
Next Extent?
No
Yes
Copy Data In Extent From CD to HD @ Prior Offset
724
Calculate Next Offset = Prior Offset + Length of Copied Data
726
Register Calculated Offset in Extent List
728

FIG. 7A

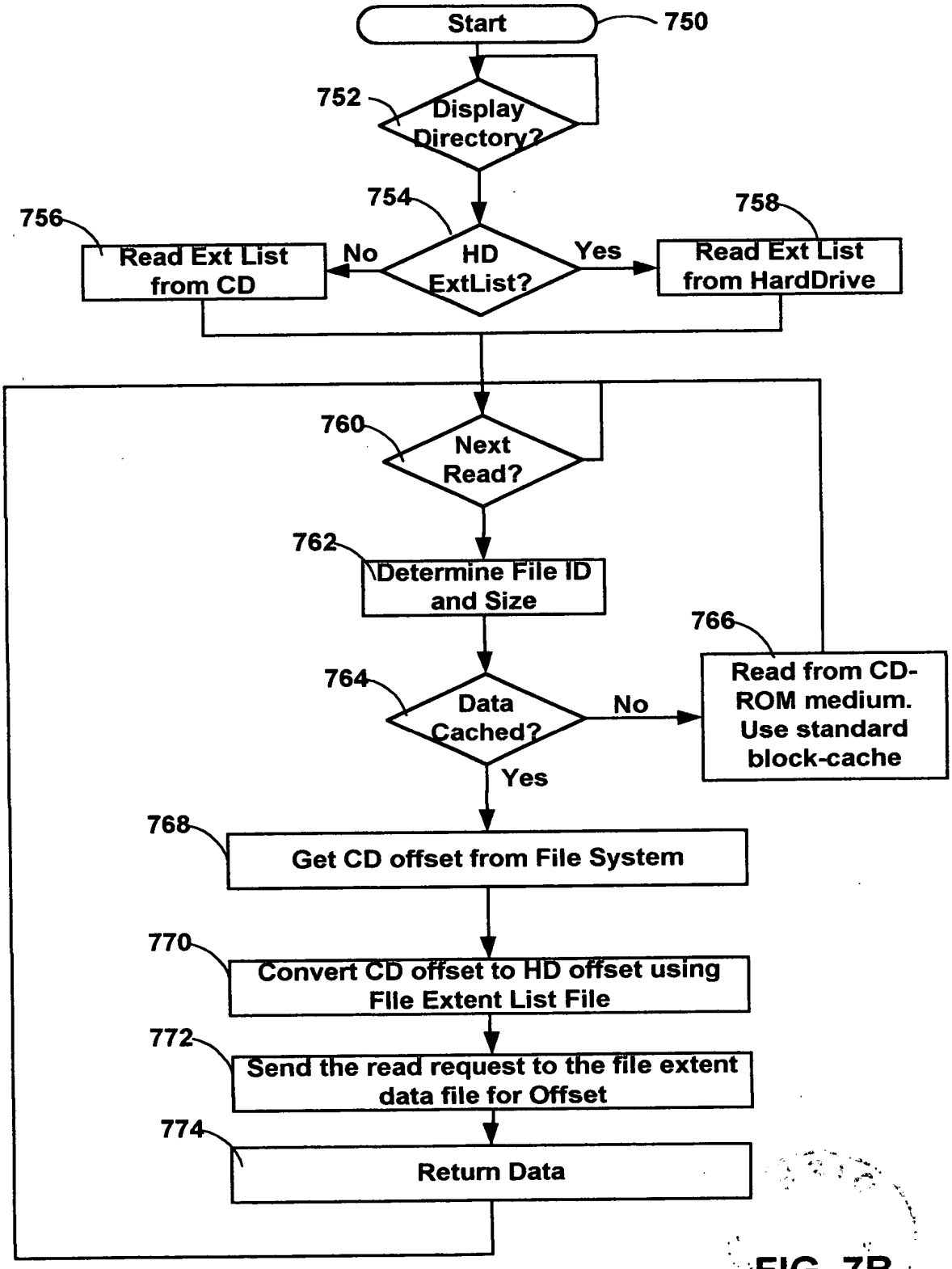
Start
750
752
Display Directory?
754
HD ExtList?
No
Yes
756
Read Ext List from CD
758
Read Ext List from HardDrive
760
Next Read?
762
Determine File ID and Size
764
Data Cached?
No
Yes
766
Read from CD-ROM medium. Use standard block-cache
768
Get CD offset from File System
770
Convert CD offset to HD offset using FIle Extent List File
772
Send the read request to the file extent data file for Offset
774
Return Data

FIG. 7B